Water Power

INDEX TO VOLUME SIXTEEN

January to December 1964

INDEX

*Denotes an illustrated article

†Denotes an abstract from a foreign publication

§Denotes an editorial note

A

Acaray River, Paraguay, Tenders for *408
Aerial Surveying *see* Surveying
Africa—
Bandama River Investigation, Ivory Coast ... ... §93
Ethiopian Power Loan ... §324
Ghana Land and Water Survey ... ... §137
Inga Scheme, Congo ... *380
Kainji, Construction Power Lines for ... ... §326
Kainji Dam Contract ... §178
Kainji, Diesel Site Sets for §242
Kainji, Generators and Transformers for ... ... §451
Kainji, Loan for ... ... §366
Kainji, Structural Steel for *408
Kainji, Turbine Contract for §366
Kariba Power Line, World Bank Loan for ... ... §494
Kariba Rocked by Three Earthquakes ... ... §367
Kariba Second Stage in Prospect ... ... §93
Nkula Falls Generating Sets §93
Orange River Dam Tenders *407
Orange River Exploratory Adits ... ... §94
Orange River Speed-Up ... §49
Orange River Township Contract ... ... §284
Owen Falls Ninth Turbine Unit ... ... §178
Roseires Dam, Sudan .. *139
Roseires Service Power Station, Sudan ... ... §3
South Africa's Largest Hydro Station, Kouga Dam ... §136
Tugela Basin Symposium, South Africa 431
Uganda, Generation in ... §326
Victoria Falls Civil Works 510
Victoria Falls Contract ... §283
Volta Dam 40% Complete §138
Volta, Generators for ... §368
Zambezi in Mozambique §2, §138
Aggregates *see* Concrete
Aldeadávila *5, *71
Alternators *see* Generators *under* Electrical Apparatus
America, United States of *see* United States of America
Analogue Circuits for Hydroelectric Schemes ... ... †322
Argentinian Investments ... §240
Aschach Completed—Königshofer *501
ASEA forms British Company §93
Australia—
Burrendong Dam Diversion Tunnel ... ... †280
Burrendong Earth Dam ... †238
Hydroelectric Industry, Australian ... ... †172
Meadowbank Dam-Foundation Contract, Tasmania §92
Meadowbank Dam, Tasmania, Control Gates for §242
New South Wales Electricity Commission ... ... §92
Nuclear Power in Australia §2
Ord River Project ... ... §178
Poatina Station Commissioned, Tasmania ... ... §240
Poatina Underground Power Station ... ... †278
Snowy Mountains, Blowering Dam Tenders Invited ... §407
Snowy Mountains, Blowering Dam Tunnel Contract ... §368
Snowy Mountains, Butterfly Valve for Murray I ... §241
Snowy Mountains, Murray I-Geehi Tunnel Holed Through ... ... §407
Snowy Mountains, Murray II—Generating Set Contracts ... ... §137
Snowy Mountains Report ... §48
Snowy Mountains Tunnel Contract ... ... §326
Snowy-Murray Second Stage Approved ... ... §3
Snowy-Murray Tunnel, Breakthrough in ... ... §48
Snowy Tunnel Tenders ... §3
Tasmania, Elliot Computer for ... ... §137
Tasmania Has Half Australia's Hydro Potential ... §493
Tasmania, Mersey-Forth Station Projected ... ... §408
Tasmania's Gordon River Scheme *525
Tidal-Power Resources, Australian ... ... †131
Victoria, Electricity in ... §92
Warragamba Dam ... ... §240
Wyangala Station Closes Down 297
Austria—
Aschach at Full Capacity §177
Aschach Completed—Königshofer *501
Danube Stations Projected ... §3
Highest Dam Projected, Malta Valley ... ... §241
Power in 1963, Austrian ... §368
Salzburg Fifteenth Rock-Mechanics Colloquium ... §450
Austrian Tunnelling Method, The New—Rabcewicz *453, *511
Automatic Controls *see* Electricity Supply Systems
Awe Project *179

B

Batang Padang Scheme, Malaysia ... ... §451
Belgian Turbines for Glen Canyon ... ... §49
Benmore *see* New Zealand
Bolivia, Corani Project ... §241
Bolivian Schemes, Financing §407
Brazeau Pump-Turbine—Soicher *522
Brazil—
Brazilian Traction Light and Power 1963 Report ... §325
Cachoeira Dourada Construction Site ... ... †89
Paulo Afonso Turbine Contract ... ... §408
Soviets May Finance Sete-Quada Scheme ... ... §138
British Columbia *see* Canada
British Hydromechanics Research Association *see* Conferences
Broom & Wade Expansion ... *317
Bulb-Type Sets *see* Turbines
Bulgaria, Future Hydroelectric Developments in ... ... †530
Butterfly Valves *see* Gates and Valves

C

Cables, Electrical *see* Electrical Apparatus
Cableways *see* Construction Equipment
Cameron Highlands Hydroelectric Scheme 25
Canada—
Arrow Dam Tenders Invited 500
BC Hydro Report ... ... §451
Brazeau Pump-Turbine—Soicher *522
Churchill River Diversion Investigation ... ... §492
Columbia River Agreement 91
Columbia River Treaty Progress ... ... §48
Columbia Treaty Ratified ... §452
Fill Processing for Portage Mountain Dam ... ... §4
Foundation Problems at Grand Rapids Development ... ... †236
Fraser River Report 239
Generators for McCormick Dam ... ... §283
Hamilton Falls, US Interest in ... ... §137
Hamilton Falls, 474MVA Sets for ... ... §282
Hydro-Quebec in 1963 ... 388
Mactaquac Consultants Appointed ... ... §326
Mactaquac Development to Proceed ... ... §137
Mactaquac Turbine and Generator Tenders Invited §406
Mactaquac Turbines and Generators ... ... §452
Madawaska Scheme Ontario §494
Manicouagan - Aux - Outardes Power Development *411, *463
Manicouagan, Ferranti 750kV Auto-Transformers for ... §493
Manicouagan 2, Non-Stop Concreting at ... ... †278
Mica Dam Contract ... ... §451
New Brunswick, Electricity In §451
Northern Canada Power Commission .. ... §92
Ontario Hydro Report ... §452
Ontario Projects ... ... §407
Peace River Tenders, Further §366
Power in 1963 ... ... §176
Twin Gorges Plant, North West Territories ... .. §284
Yukon, Power from the—Sewell ... *259, *306, *348
Winter Undercover Construction ... ... †280
Cavitation, Effect of Various Types of, on Noise, Erosion and Performance ... ... †489
Cementation Practice, Dam, Some Aspects of—Lancaster Jones 226
Ceylon, Maskeli Oya Development ... ... §177
Channels—
Gradually Varied Flow in Open Channels—Francis *26
Flows in Non-Rectanguiar Open Channels—Francis and Chikwendu *423
Hydraulic Jump in a Convergent Channel ... ... †531
Palaminy Headrace, Testing the ... ... †88
Chile, Rapel and Other Developments 256
Coating, Sealer, Salt-Water ... 442
Coatings, Sprayed, Tungsten-Carbide 442
Cofferdams *see* Dams
Colombia—
Dredge, Purpose-Made for Anchicaya Reservoir ... *232
Nare Scheme Loan for ... §178
Columbia River Treaty Progress ... ... §48
Combined Hydro and Thermal Development *see* Electricity Supply Systems

DEC 2 1969

Computers—
Analogue Circuits for Hydro-electric Schemes ... ... †322
Analogue Computer for Investigating the Stability of Hydro Plants ... ... †487
Buttress Dams on Complex Rock Foundations—Zienkiewicz and Cheung ... *193
Computer Analysis for Tunnel Flowing Full or Partially Full ... ... †364
Computers, Electronic ... †46
Flaming Gorge Dam Readings Computerised ... §176
Tasmania, Elliot Computer for ... ... §137
Concrete—
Aggregate Crushers for Mangla *83
Manicouagan 2, Non-Stop Concreting at ... ... †278
Pump for Air-Entraining Agents 128
see also Dams *and* Tunnels
Conferences—
Arch Dams, International Symposium on, Southampton ... ... §136
Arch Dams, International Symposium on, Southampton—Rydzewski *294
Association of Engineering Geologists ... ... §366
Belgian Power-Station Conference 1966 ... ... §492
CIGRE, 1964 ... ... 377, 435
Concrete-Dam Models, Lisbon Symposium on,—Zienkiewicz 38
Fluid Sealing, Second International Conference on, BHRA ... ... §93, §283
Hydraulics and Fluid Mechanics, Australasian Conference on ... ... §283
IAHR Congress, Tenth 20, 66, 122, 165
IAHR Eleventh Congress ... §366
ICOLD, Eighth Congress, Edinburgh §136, 175, §240, 343, 396, 420, §458
Instability in Hydraulics and Fluid Mechanics, SHF Conference on 389
New Forum?, A 47
River Flood Hydrology Symposium ... ... §450
Salzburg Fifteenth Rock Mechanics Colloquium ... §450
Société Hydrotechnique de France Eighth Congress §49
Swansea Stress Analysis Conference ... ... §93
Thermodynamic Method of Measuring Efficiency, Conference on—Foord ... 483
Tugela Basin Symposium ... 431
UNIPEDE, 1964 ... 428, 479
Water Conference and Exhibition, Berlin, 1963 ... †90
World Power Conference Lausanne Meeting §136, 449, 508
Congo, Inga Scheme *380
Construction Equipment—
Cableway Platforms at Large Dam Sites ... ... †322
Excavator/Crane, Smith "26" *84
Raise Driving Platform, "Alimak" *275
Salzgitter Bunker Train used for Driving Chanrion Tunnel—Bretz *114
see also Concrete, Dams, Drilling *and* Tunnels
Control of Hydroelectric Systems *see* Electricity Supply Systems *and* Hydrology, Regulation and Storage
Cook Strait *see* New Zealand
Correlation of Power Resources *see* Electricity Supply Systems
Cranes *see* Construction Equipment
Cruachan Section, Awe Project, Scotland *182
Cuba, Hanabanilla Hydroelectric Plant, Operating the ... †364
Czechoslovakia, the Hungarian-Czech Danube Project §3, *233

D

Da Nhim River Development South Vietnam ... ... †320
Dams—
Affoldern Dam, Grouting ... †236
Aldeadávila Dam *5
Arch Dam Design ... ... †487
Arch-Dam Design by the Modified Ritter Method †530
Arch Dam, Effect of Poisson's Ratio on Force Pattern in a ... ... †364
Arch Dam Models, Effect of Poisson's Ratio on Stress Distribution in ... ... †446
Arch Dams and their Foundations, Behaviour of—Serafim *199
Arch Dams, Computing the Elastic Equilibrium of ... †89
Arch Dams, International Symposium on, Southampton ... ... §136
Arch Dams, International Symposium on, Southampton—Rydzewski *294
Arch Dams, Static Analysis of ... ... †236
Arch Dams, Stresses in, and Thin-Snell Deformation Energy ... ... †237
Arrow Dam Tenders Invited 500
Aswan High Dam, An Alternative to the 27
Atexcaco Dam, Mexico ... †531
Austria's Highest Dam Projected, Malta Valley ... §241
Awe Project, Nant, Cruachan and Awe Dams *179
Baldwin Hills Failure ... 405
Benmore Dam Virtually Completed ... ... §240
Bhakra Dam Inaugaurated §2
Blowering Dam, Snowy Mountains, Tenders Invited §407
Burrendong Dam Diversion Tunnel ... ... †280
Burrendong Earth Dam ... †238
Buttress Dams on Complex Rock Foundations—Zienkiewicz and Cheung ... *193
Cementation Practice, Dam, Some Aspects of—Lancaster-Jones 226
Concrete-Dam Models, Lisbon Symposium on—Zienkiewicz 38
Continuous Concrete Placement on Dams ... ... †237
Crown Deflection of Circular Arches ... ... †46
Dinas and Cwm Rheidol Dams, Wales *28
Dumping Soils into Ponded Water, Dams Constructed by ... ... †237
Earth Dam Construction, American Advances in—Mackintosh *218
Earth Dams, Effect of Insufficient Height of Filter in †171
Earthquakes, Hydrodynamic Pressures due to—Zienkiewicz *382
Euphrates Dam Project, Syria §450
Fill Processing for Portage Mountain Dam ... ... §4
Filters, Inclined, in Earth Dams ... ... †530
Flaming Gorge Dam Readings Computerised ... §176
Foundation Problems in Dam Construction ... ... †90
French Dams ... ... †321
Gravity Dams, Concrete, Stability Checks for ... ... †236
High Aswan Dam Diversion §282
ICOLD, Eighth Congress, Edinburgh §136, 175, §240, 343, 396, 420, §458
ICOLD Ninth Congress ... §282
Indonesia, Djatiluhur Dam §408
John Day Lock and Dam—Mackintosh *355, *370
Kainji Dam Contract ... §178
Landslide Builds a Dam ... †364
Mangla, Aggregate Crushers for *83
Manicouagan Dams ... *413, *463
Meadowbank Dam Foundation Contract, Tasmania ... §92
Menjil Dam ... ... †44
Mica Dam Contract ... §451
Morrow Point Dam ... †489
Orange River Dam Tenders §407
Panshet and Khadakwasla Dams, Bombay, Failure of—Hunter 251
Pong Neeb Dam Contract, Thailand ... ... §241
Rance Cofferdams, Testing the Cells of the ... ... †89
Rock Mechanics and Dam Design—Jaeger *210
Roseires Dam, Sudan ... *139
Round Butte Project ... †445
Roxburgh Dam, Buoyant Bulkheads at ... ... †45
Russia, High Rockfill Dams in—Mackintosh 315
Seismic Tests on Dams ... †446
Shell Theory Applied to Constant-Angle Arch Dams ... †489
Strathfarrar and Kilmorack Dams:
Aigas *102
Beannachran *95
Kilmorack *103
Loichel *55
Monar *53
Swansea Stress Analysis Conference ... ... §93
Templates for Spillway Profiles—Vennemann and Pendse *477
Tormes Dam to be Built §368, §452
Vaiont Disaster 4, *199, †445, *210, †487
Volta Dam 40% Complete §138
Warragamba Dam ... ... §240
Water-Control Equipment in Dams, Design of ... ... †531
see also Concrete; Conferences; Research; Hydrology, Regulation and Storage; *and* Geology, Rock Mechanics and Soil Mechanics
Data Logger for Field Work *233
Development of Resources *see* Resources and Development
Devon, Pumped-Storage Survey in ... ... §367
Dilution Method of Flow-Rate Measurement using a Light-Scattering Technique—Brinkworth and Evans *495
Diversion Structures, Drop-Type, in Run-of-River Projects ... ... †403
Dredge, Purpose-Made, for Anchicaya Reservoir ... *232
Drilling—
High-Pressure Down-the-Hole Drilling Units 526
Lubrication Injector, Drill Rod, Boyles *168
Röldal Project, Tunnel Drilling at 337
Turkey buys Joy Core Drills §93

E

Earthquakes, Hydrodynamic Pressures due to—Zienkiewicz *382

DEC 2 1969

LINDA HALL LIBRARY
KANSAS CITY MO

Egypt—
Aswan High Dam, An Alternative to the ... 27, 528
High Aswan Dam Diversion §282
Qattara Depression Scheme §452
Electrical Apparatus—
Aldeadávila Electrical Equipment *78
Auto-Transformers, Ferranti 750kV, for Manicouagan §493
Cable, Cook Strait, Earth for §325
CIGRE, 1964 ... ... 377, 435
Generating Sets for Nkula Falls ... ... §93
Generator for Seitevare, Sweden ... ... §282
Generator Installation, Planning for Large ... ... †132
Generator-Motors, Reversible, for Pumped-Storage Applications ... ... †131
Generator-Motors, Two-Speed ... ... †132
Generators, Cwm Rheidol *35
Generators for Göschenen Power Station ... ... †488
Generators for McCormick Dam ... ... §283
Generators for Murray II, Snowy Mountains ... ... §137
Generators for Volta ... §368
Generators, Large Hydroelectric, Russian ... ... †172
Generators, Mactaquac ... §452
Generators, Mactaquac Tenders Invited ... ... §406
Generators ordered for Guri §452
Generators with Liquid-Cooled Stators and Rotors †445
Hamilton Falls, 474MVA Generators for ... ... §282
Kainji, Generators and Transformers for ... ... §451
Power Lines, Construction, for Kainji ... ... §326
South Wales Switchgear Research and Development Centre *43
STC Simple Supervisory System *82
Switchgear Agreement, Bruce-Peebles/Brown-Boveri ... §367
Switchgear for Batang Padang ... ... §492
System Diagram, Drafting Tapes Build Up a *526
Transformer, 735kV, Canadian GEC *485
Transformer, 735kV, English Electric *486
Transformers, Italian, for USA ... ... §408
Transmission Centenary, High-Voltage 135
Transmission Line in Glen Falloch, Helicopters for §176
Transmission Lines, Construction and Maintenance of †90
Transmission Lines, EHV ... †89
750kV Systems ... ... †446
Electricity Supply Systems—
Austrian Power in 1963 ... §368
Automatic Data Processing and Load-Frequency Control for US Public Utility 486
Automatic Hydroelectric Stations for Sardinia ... ... §94
Coordinating Hydroelectric and Thermal Power ... †237
French Electricity Consumption ... ... §137
Irish Power in 1963/64 ... §366
Italian Electricity Supply ... §324
Microwave Network for Colorado Project 276
New Brunswick, Electricity in ... ... §451
New South Wales, Australia, Electricity Commission ... §92
Ontario Hydro Report ... §452
Portugal, Electricity in ... §406
Portugal, Progress on the Cávado ... ... §242
Power in Mexico ... ... §242
Regulation Systems for Peak Loads ... ... †171
Remote Control by Telephone, GEC *128
Spain, Electric Power in ... 336
Sweden, Power Production in §241
Tugela Basin, South Africa, Symposium 431
Uganda, Generation in ... §326
UNIPEDE, 1964 ... 428, 479
United Kingdom, Power in §177
Victoria, Australia, Electricity in ... ... §92
750kV Systems ... ... †446
see also Hydrology, Regulation and Storage; Pumps, Pump-Turbines and Pumped Storage; Tidal Power *and* Resources and Development
English Electric Co. Ltd., Netherton Works *316
Ethiopia *see* Africa
Excavators *see* Construction Equipment

F

Fish-Attraction Pumps for John Day ... ... §283
Fish-Attraction Pumps for Wells Dam, Washington ... §240
Float Switch, KDG *168
Flow *see* Channels; Gates and Valves; Hydraulics; Hydrology, Regulation and Storage; Penstocks, Pipes and Pressure Shafts; Pumps, Pump-Turbines and Pumped Storage *and* Turbines
Flowmeter Amplifier and Multi-Point Units, Emflux *401, *524
Flows in Non-Rectangular Open Channels—Francis and Chikwendu *423
Fluid Mechanics *see* Hydraulics
Foundation Problems at Grand Rapids Development ... †236
France—
Chassezac, Development of the ... ... †402
Dams, French ... ... †321
Development Prospects in France ... ... †279
Durance Development ... †171
Electricity Consumption, French ... ... §137
Franco-Spanish Electricity Pact ... ... §324
French Turbines in Spain ... §494
La Bathie Pressure Shaft ... †46
La Cère Development ... †279
Mayenne Micro Power Stations ... ... †402
Mont Cenis Project ... ... †278
Mont Cenis Scheme to give 485GWh ... ... §283
Moselle Canal Open in June §93
Rhine, French Work on the †45
Rhône Developments and Pierre Bénite ... ... †320
Vallabrègues Scheme Approved ... ... §407

G

Gates and Valves—
Butterfly Valve for Murray I ... ... §241
Defects, Common, in Gate Installations ... ... †238
Discharge Coefficients for Control Gates—Anwar ... *152
Kainji, Structural Steel for ... §408
Kendall, High Duty Valves from 13
Meadowbank Dam, Tasmania, Control Gates for §242
Possible Economies in Hydro Schemes—Causon 439
Valve Sealing System, New *442
Vibration Tests on High-Head Gates ... ... †44
Water-Control Equipment in Dams, Design of ... ... †531
Generators *see* Electrical Apparatus
Geology, Rock Mechanics and Soil Mechanics—
Association of Engineering Geologists ... ... §366
Convergence Extensometers *128
Geology in the Training of the Civil Engineer—Duncan 257
Geotechnical Behaviour of Crystalline Rocks and Tunnelling under Deep Overburden ... ... †531
In-Situ Rock Stress Measurement Trials *127
Rock Mechanics and Dam Design—Jaeger *210
Salzburg Fifteenth Rock Mechanics Colloquium ... §450
Trieste University Soil Mechanics Laboratory ... †44
Whanganui, Rock Mechanics Consultants Retained for §493
Germany—
Moselle Canal Open in June §93
Rönkhausen, Pump-Turbines for ... ... §406
Ghana *see* Volta River *under* Africa
Greece, Tavropos Development †236
Groundwater Flow Studies ... †446
Guadalcanal, Consultants Retained for ... ... §326
Guatemala, IADB Loan for Los Esclavos ... ... §177

H

Hamilton Falls *see* Canada
Helicopters in Glen Falloch §176
Huinco Power Scheme, Peru—Ribi and Schlittler *160, *243
Hungarian-Czech Danube Project ... ... §3, *233
Hungary's Tisza, Second-Stage Scheme for ... ... §284
Hydraulic Design, Optimum, in Water Resource Systems—Low *472
Hydraulics—
Channels, Open, Gradually Varied flow in—Francis ... *26
Discharge Characteristics of Weirs of Finite Crest Width ... ... †280
Discharge Coefficients of Side Weirs ... ... †364
Flow, Turbulent, Head Losses in ... ... †279
Forced Hydraulic Jump, The—Rajaratnam ... *14, *61
HRS Course for Overseas Engineers ... ... §136
Hydraulic Jump in a Convergent Channel ... ... †531
Hysteresis in Steady Free-Surface Flow—Abecasis and Quintela *147
Instability in Hydraulics and Fluid Mechanics, SHF Conference on 389
Open Channels, Non-Rectangular, Flows in—Francis and Chikwendu *423
Piers, Pressure Distribution on, in Two-Dimensional Conduits ... ... †172
see also Channels; Conferences; Gates and Valves; Hydrology, Regulation and Storage; Surge Chambers; *and* Turbines
Hydroelectric Developments, Comparing the Producibility of ... ... †88
Hydrology, Regulation and Storage—
Dredge, Purpose-Made, for Anchicaya Reservoir ... *232

Microwave Telemetry on Mokelumne River ... ... †321
River Flood Hydrology Symposium ... ... §450
Storage Reservoirs in Spain †88
see also Dams; Pumps, Pump-Turbines and Pumped Storage *and* Resources and Development
Hysteresis in Steady Free-Surface Flow—Abecasis and Quintela *147

I

ICOLD Eighth Congress, Edinburgh §136, 175, §240, 343, 396, 420, §458
ICOLD, Ninth Congress ... §282
India—
Bhakra Dam Inaugurated ... §2
Bhakra Reservoir to be Raised ... ... §324
DVC Fourth Plan Outlay ... §492
Idikki Water Power Project §94
India's Water-Power Progress—Swaminatham ... 470
Kodayar Hydroelectric Project ... ... §242
Kundah Project Progress ... §177
Lower Jhelum Scheme ... §452
Madhyar Pradesh, Power Development in ... ... †280
Nagarjunasagar Project ... §241
Parambikulam-Aliyar Project 354
Punjab Shortfall in Power ... §493
Rajasthan, Canadian Loan for ... ... §325
Rajasthan, Power Development in ... ... †402
River Development Laboratory, Indian ... ... §94
Sharavathi Malali Tunnel Opened ... ... §178
Sharavathi Project ... ... †488
Srisailam Hydroelectric Project ... ... §451
Tikerpara Hydroelectric Project ... ... §325
Tungabhadra Second Stage Commissioning ... ... §49
Yamura Scheme Ahead of Schedule ... ... §49
Indonesia, Djatiluhur Dam ... §408
Inga Scheme, Congo *380
Instability in Hydraulics and Fluid Mechanics, SHF Conference on 389

Intakes—
Aldeadávila Intakes *71
Strathfarrar and Kilmorack Side Intakes:
Neatyburn *98
Uisge Misgeach *56
International Association for Hydraulic Research *see* Conferences
International Bank for Reconstruction and Development *see* World Bank
International Commission on Large Dams *see* ICOLD *under* Conferences
International Power Exchanges *see* Resources and Development
International Rivers *see* Resources and Development
Inverawe Section, Awe Project *190
Iran, Menjil Dam ... ... †44
Iran, Sefid Roud Development †363
Iraq, Samarra, Tenders for ... §368
Irish Power in 1963/64 ... §366
Iron Gates Agreement Signed §3
Iron Gates Project Construction Starts ... ... §451

Italy—
Chiese River Project ... †403
Electricity Supply, Italian ... §324
Sardinia, Automatic Hydroelectric Stations for ... §94
USA, Italian Transformers for ... ... §408
Vaiont Disaster 4, *199, *210, †445, †487

J

Jacks, Positioning, Hydraulic, Sutcliffe *167
John Day Lock and Dam—Mackintosh *355, *370

K

Kainji, Kariba *see* Africa

L

Laboratories *see* Research
Laloki No. 2 ... ... †363
Large Dams Congress *see* ICOLD *under* Conferences
Level Measuring System, Digital, Datex 524
Light-Scattering Technique, Dilution Method of Flow-Rate Measurement using a—Brinkworth and Evans ... *495
Lima, Loan for ... ... §49
Luxembourg—
Moselle Canal Open in June §93
Vianden ... *285, *327, *391
Vianden Inaugurated ... §282

M

Malaysia—
Batang Padang Scheme ... §451
Cameron Highlands Hydroelectric Scheme 25
Perak River Survey ... ... §367
Switchgear for Batang Padang ... ... §492
Mangla Project *208
Manicouagan - Aux - Outardes Power Development *413, *463
Mekong Projects ... ... §242
Mexico, Atexcaco Dam ... †531
Mexico, Power in ... †49, §242
Micro Power Stations, Mayenne †402
Models *see* Research
Morocco, Tessaout River Studies ... ... §368
Moselle Canal Open in June §93

N

Nant Section Awe Project, Scotland *180
New Zealand—
Annual Report 1964 ... §450
Atene Site Investigation ... §326
Benmore Dam Virtually Completed ... ... †240
Benmore Reservoir to be Filled ... ... §284
Cook Strait Cable, Earth for §325
Cook Strait Cable, Loan for §176
Hari-Hari Hydro Plant ... †172
Hydroelectric Development in New Zealand ... ... §367
Lake Taupo Diversion Scheme ... ... §242
Manapouri, Harland Turbines for ... ... §94
Manapouri Power in April, 1968 ... ... §94
Maraetai II and its Moth Balls ... ... §367
Power Investigation, New Zealand ... ... §94
Power Plan Urged ... ... §406
Roxburgh Dam, Buoyant Bulkheads at ... ... †45
Tongariro Scheme Approved §492
Waikato Hydro Developments ... ... †280
Whanganui, Rock Mechanics Consultants Retained for §493
Nohab Reorganisation ... 283

Norway—
Brokke Scheme, Finance for §92
Electricity Production in 1963 §283
Norsk Hydro Report ... §138
Norwegians to Build Soviet Station (Pasvik II) ... §451
Röldal Project 337
Water Power Resources, Investigation of ... ... §406
Nuclear Power in Australia ... §2

O

Ontario *see* Canada
Orange River *see* Africa

P

Pakistan—
Brahmaputra Project ... §176
Indus Scheme, IDA Credit for ... ... §408
Karnafuli Development, East Pakistan ... ... †171
Mangla, Aggregate Crushers for *83
Mangla Project *208
Quadirabad Barrage ... §284
Paraguay, Acaray River, Tenders for ... ... §408
Peace River *see* Canada
Penstocks, Pipes and Pressure Shafts—
Aldeadávila Penstocks ... *72
Bursts in Penstocks, Protection from ... ... †46
Construction Problems and Welding Controls of Large Steel Pipelines—Bier ... 107
Diameter, Approximate, of Pipes and Tunnels—Franke *253
Dilution Method of Flow-Rate Measurement using a Light-Scattering Technique—Brinkworth and Evans *495
La Bâthie Pressure Shaft ... †46
Penstock-Burst Detector ... †133
Penstock Vibration at Niederwatha ... ... †447
Steel-Lined Pressure Shafts, External Water Pressure Designs for—Ullmann ... *298, *338
Steel-Lined Shaft of Electra-Massa Development, High-Pressure Tests for ... ... †321
see also Tunnels
Peru, Lima, Expanding the Power Supply for (Huinco)—Ribi and Schlittler *160, *243
Pipes *see* Penstocks, Pipes and Pressure Shafts
Poatina *see* Australia
Poland, Future of the Vistula §138
Portugal—
Bemposta Loan for ... ... §4
Cávado, Progress on the ... §242
Electricity in Portugal ... §406
Zêzere, Generation on the ... §283
Possible Economies in Hydro Schemes—Causon 439
Power Resources, Correlation of *see* Electricity Supply Systems
Power Resources, Development of *see* Resources and Development

Power Stations—
Aldeadávila Power Station *73
Awe Project, Nant, Cruachan and Inverawe Power Stations *181
Cwm Rheidol Power Station *34
Huinco Underground Power Station, Peru—Ribi and Schlittler *246
Manicouagan 5 Power Station *418
Mayfield Power Plant ... †90
Nagymaros Station Model ... *233
Poatina Station Commissioned, Tasmania ... ... §240
Poatina Underground Power Station ... ... †278
Rockbolts, Supporting Excavations by Means of ... †44
Roseires Service Power Station, Sudan ... ... §3
Russian Power Stations, Large ... ... †44

Sils Power Station, Switzerland ... ... †44
Strathfarrar and Kilmorack Power Stations:
Aigas *102
Culligran *100
Deanie *58
Kilmorack *103
Underground Hydroelectric Stations ... ... †363
Vianden ... *285, *327, *391
Viksjöfors Power Station ... †488
Pressure Shafts *see* Penstocks, Pipes and Pressure Shafts
Primer, Magigalv Zinc-Rich ... 84
Pumps, Pump-Turbines and Pumped Storage—
Brazeau Pump - Turbine—Soicher *522
Cruachan Section, Awe Project, Scotland *182
Devon, Pumped-Storage Survey in ... ... §367
Erzhausen Storage Pump ... *168
Ffestiniog Pumped-Storage Scheme ... ... §323
Fish-Attraction Pumps for John Day ... ... §283
Fish-Attraction Pumps for Wells Dam, Washington ... §240
Generator-Motors, Two-Speed †132
High-Head Pump Turbines—Weiss 409
Hydraulic Efficiency, Thermometric Method of Measuring—Foord, Langlands and El-Agib *432
Hydro and Pumped Storage for Peaking—Rheingans ... *271
Inertia-Flow Method Applied to Pumping Circuits—Pearsall *80
Isogyre Pump-Turbine, Charmilles *41
Kiev Pumped-Storage Scheme §367
Niederwatha, Penstock Vibration at ... ... †447
Ontario, Thornbury Station Planned ... ... §407
Pump-Turbines for Rönkhausen, Germany ... ... §406
Reversible Generator-Motors for Pumped-Storage Applications ... ... †131
San Luis Pumped-Storage Station, USA ... ... †446
Sigmund Pulsometer Offer Pump Research Facilities 527
Smith Mountain, Pump-Turbines for ... ... †88
Swedish Pump-Turbines for Spain ... ... §326
Thermodynamic Method of Measuring Efficiency, Conference on—Foord ... 483
Thermometric Method of Measuring Hydraulic Efficiency—Foord, Langlands, and El-Agib ... *432, 484
Vianden ... *285, *327, *391
Vianden Inaugurated ... §282
Windage and Friction Losses of Hydraulic Machine Rotors ... ... †531

Q

Qattara Depression Scheme ... §452

R

Radio Alarm Units for Scottish Hydro Board ... ... §368
Regulation and Storage *see* Hydrology, Regulation and Storage
Remote Control *see* Electricity Supply Systems
Research—
Arch Dam Models, Effect of Poisson's Ratio on Stress Distribution in ... ... †446
Civil Engineering Research Association 263
HRS Course for Overseas Engineers ... ... §136
Hydraulics Research 1963 (Wallingford) 354
Indian River Development Laboratory ... ... §94
Micromachines in Power System Studies ... ... †279
Sigmund Pulsometer Offer Pump Research Facilities 521
South Wales Switchgear Research and Development Centre *43
Trieste University Soil Mechanics Laboratory ... †44
see also Conferences
Resources and Development—
Bolivian Schemes, Financing *407
Columbia River Agreement 91
Hydro Power as an Export 365
International Rivers, Power Development of, under International Law ... †133
New Zealand, Hydroelectric Development in ... ... §367
New Zealand Power Investigation ... ... §94
New Zealand Power Plan Urged *406
Norwegian Water-Power Resource Investigation ... *406
Portugal, Electricity in ... *406
Scandinavian - Continental Electricity Exchanges ... †89
Spain, Water Power in ... §368
Tugela Basin, South Africa, Symposium 431
see also Electricity Supply Systems; Pumps, Pump-Turbines and Pumped Storage; *and* Tidal Power
Reservoirs *see* Hydrology, Regulation and Storage
Rheidol Scheme *28
Rheidol Scheme Opened ... §324
Rhine-Main-Danube Canal, Power Generation on the ... †46
Rock Mechanics *see* Geology, Rock Mechanics and Soil Mechanics
Rockbolts, Supporting Excavations by Means of ... ... †44
Rollason, Mr. George ... *381
Roseires *see* Africa
Rugby College Water-Turbine House ... ... §494
Rumania—
Bucarest Polytechnic Institute †488
Iron Gates Agreement Signed §3
Iron Gates Project Construction Starts ... ... §451
Run-of-River Plants, Remote Water-Level Power Control in ... ... †45
Russia—
Bratsk and Votkinsk Developments ... ... §178
Bulb Turbines, 20MW, for Cherepovetsk ... ... §137
Chirkeysk Project ... ... †403
Dams, High-Rockfill in Russia—Mackintosh ... 315
Generators, Large Hydroelectric, Russian ... ... †172
Kaplan-Runner Designs, Russian ... ... †171
Kaplans, Large, Operating Experience with ... ... †278
Kiev Pumped-Storage Scheme †367
Large Russian Power Stations †44
Norwegians to Build Soviet Station (Pasvik II) ... §451
Sayano-Shushensk (Sayansk) Project ... ... †362
Sayansk, Scheme, Largest Soviet Hydro Plant Planned ... ... §94
Ship Transporters on the Angara and Yenissei ... †45
Tidal - Power Scheme, 14,000MW ... ... §177
Tidal Station Work Starts on §325
Volga Development Scheme †89
West Dvina River, Development of the ... ... †131

S

Scotland—
Awe Project *179
Cruachan, Standby Diesel for ... ... §326
Foyers, Scottish Hydro Board Power for ... ... §493
Helicopters in Glen Falloch §176
Inquiries Requested into four Scottish Schemes ... ... §2
Nant Station Commissioned §2
North of Scotland Hydro-Electric Board Report, 1962 225
North of Scotland Hydro-Electric Board's Anniversary 376
Radio Alarm Units for Scottish Hydro Board ... ... §368
Strathfarrar and Kilmorack Scheme *50, *95
Screens, Plastic Panels for ... 42
Shafts, Pressure *see* Penstocks, Pipes and Pressure Shafts
Shafts, Surge *see* Surge Chambers
Ship Transporters on the Angara and Yenissei ... †45
Snowy Mountains Scheme *see* Australia
Société Hydrotechnique de France *see* Conferences
Soil Mechanics *see* Geology, Rock Mechanics and Soil Mechanics
Spillways *see* Dams
Storage *see* Hydrology, Regulation and Storage
Switchgear *see* Electrical Apparatus
Spain—
Aldeadávila *5, *71
Electric Power in Spain ... 336
Franco - Spanish Electricity Pact ... ... §324
French Turbines in Spain ... §494
Pump-Turbines for Santiago de Jares, Swedish ... ... §326
Storage Reservoirs in Spain †88
Tormes Dam to be Built ... §368, §452
Ullun, Tenders soon for ... §368
Water Power in Spain ... §368
Square and Cube Roots, Calculating—Sollid 462
Steel, New, for Turbine Runners—Baggström *516
Strathfarrar and Kilmorack Scheme *50, *95
Sudan *see* Roseires *under* Africa
Surge Chambers—
Aldeadávila Surge Chambers *74
Mass Oscillations in Surge Tanks—Naber *264
—Russo *409
Possible Economies in Hydro Schemes—Causon 439
Stability Investigations by Computer—Mosonyi and Nagy *312
Surge Control Devices ... †278
Survey by Helicopter and Radar *361
Sweden—
ASEA forms British Company ... ... §93
Nohab Reorganisation ... §283
Power Production in Sweden §241
Sällsjö Station Turbines ... §177
Seitevare, Generator for ... §282
Seitevare, Large Turbine for §367, §441
Turkey, Swedish Turbines for Harsit ... ... §284
Viksjöfors Power Station ... †488
Switzerland—
Albula-Landwasser Development ... ... †363
Chanrion Tunnel, Driving the —Bretz *114
Electro-Watt Report ... §48
EOS Report ... ... §283

Generators for Göschenen Power Station ... ... †488
Hongrin Development ... †88
New Swiss Plants in Operation ... ... †172
NOK Report ... ... †241
Sils Power Station ... ... †44
Syria, Euphrates Dam Project §450

T

Tasmania *see* Australia
Templates for Spillway Profiles —Vennemann and Pendse ... *477
Thailand, Pong Neeb Dam Contract ... ... §241
Thermal Power *see* Electricity Supply Systems
Thermodynamic Method of Measuring Efficiency, Conference on—Foord 483
Thermometric Method of Measuring Hydraulic Efficiency—Foord, Langlands and El-Agib *432, 484
Tidal Power—
Australian Tidal-Power Resources ... ... †131
Russian Tidal Station, Work Starts on ... ... §325
Russian 14,000MW Tidal-Power Scheme ... ... §177
Transformers *see* Electrical Apparatus
Transmission *see* Electrical Apparatus
Tunnels—
Austrian Tunnelling Method, The New—Rabcewicz *453, *511
Burrendong Dam Diversion Tunnel ... ... †280
Chanrion Tunnel, Driving the —Bretz *114
Computer Analysis for Tunnel Flowing Full or Partially Full ... ... †364
Diameter, Approximate, of Pipes and Tunnels—Franke *253
Geotechnical Behaviour of Crystalline Rocks and Tunnelling under Deep Overburden ... ... †531
Lightning, Protection from, when Driving Tunnels in Mountains ... ... †132
Mole for Hardrock Tunnelling ... ... †322
Raise Driving Platform, "Alimak" *275
Rheidol Scheme Tunnels ... *31
Rockbolts, Supporting Excavations by Means of ... †44
Sharavathi Malali Tunnel Opened ... ... §178
Snowy Mountain Blowering Dam Tunnel Contract ... §368
Snowy Mountains, Murray I-Geehi Tunnel Holed Through *407
Snowy Mountains Tunnel Contract ... ... §326
Snowy-Murray Tunnel, Breakthrough in ... ... §48
Snowy Tunnel Tenders ... §3
Strathfarrar and Kilmorack Tunnels:
Culligran *95
Deanie *57
Transandean Tunnel, Peru ... *163
Ventilation Ducting, Flexidux *485
Ventilation Ducts, Steel ... *84
Turbines—
Alabama Power Company, Turbines for ... ... §138
Aldeadávila Turbines ... *78
Axial-Flow Water Turbines †132
Belgian Turbines for Glen Canyon ... ... §49
Brazil, Paulo Afonso Contract ... ... §408
Bulb Turbines, 20MW for, Cherepovetsk ... ... §137
Bulb-Type Sets versus Vertical Sets ... ... †487
Cavitation Conditions in Francis Turbines ... ... †402
Cracking in Welded Joint between Turbine Scrollcase and Sectionalised Stayring—Webb *314
Cwm Rheidol Turbines ... *34
Deriaz Turbines, Ten Years of †172
Dilution Method of Flow-Rate Measurement Using a Light-Scattering Technique —Brinkworth and Evans ... *495
Erzhausen Turbines *276
Flow-Velocity Measurements, Instantaneous, Instruments for ... ... †530
French Turbines in Spain ... §494
Grease-Lubricated Turbine Bearing ... ... †320
Hamilton Falls, Canada, 474MVA Turbines For ... §282
Harsit, Turbines for ... §284
Hydraulic Efficiency, Thermometric Method of Measuring—Foord, Langlands and El-Agib *432
IEC Hydraulic Turbine Committee 353
Irrigation Reservoir Turbines drive Water Pumps ... *401
Kainji, Turbine Contract for §366
Kaplan-Runner Blade, Determination of Hydraulic Resultant acting on ... ...†447
Kaplan - Runner Designs, Russian ... ... †171
Kaplan Turbines, Emergency Closure Devices for ... †530
Kaplan's Ideas and Further Developments ... ... †488
Kaplans, Large Russian, Operating Experience with †278
Low-Head Turbines, Analysing the Hydraulic Efficiency of ... ... †489
Mactaquac Turbine Tenders Invited ... ... §406
Mactaquac Turbines ... §452
Manapouri, Harland Turbines for ... ... §94
Nickajack Turbine Contracts §325
Owen Falls Ninth Turbine Unit ... ... §178
Pelton Turbines, Modern ... †90
Remote Water-Level Power Control in Run-of-River Plants ... ... †45
Rugby College Water-Turbine House ... ... §494
Sällsjö Station Turbines ... §177
Seitevare, Large Turbine for §367, §441
Selection and Installation of Hydraulic Turbines ... †279
Steel, New, for Turbine Runners—Baggström *516
Thermalito Turbines, Feather River ... ... §178
Thermodynamic Method of Measuring Efficiency, Conference on—Foord ... 483
Thermodynamic Method, Turbine Efficiency Measured by ... ... †489
Thermometric Method of Measuring Hydraulic Efficiency—Foord, Langlands and El-Agib ... *432, 484
Tubular Turbine, Allis-Chalmers *360
Turbines for Murray II, Snowy Mountains ... ... §137
Welded Turbine Shaft, 500MW §4
Windage and Friction Losses of Hydraulic Machine Rotors ... ... †531
Yugoslav-Swedish Contracts for Malpaso and Niger River Turbines ... ... §241
Turkey—
Hydro Projects, Turkish ... †530
Joy Core Drills, Turkey buys §93
Kadincik River Plant, Credit for ... ... §407
Turbines for Harsit ... ... §284

U

Uganda *see* Africa
Underground Stations *see* Power Stations
UNIPEDE, 1964 ... 428, 479
United Kingdom, Power in the §177
United States of America—
Baldwin Hills Failure ... 405
Belgian Turbines for Glen Canyon ... ... §49
Blue Mesa Project ... ... †322
Columbia River Agreement 91
Columbia River Treaty Progress ... ... §48
Columbia Treaty Ratified ... §452
Earth Dam Construction, American Advances in—Mackintosh *218
Flaming Gorge Dam Readings Computerised ... §176
Hamilton Falls, US Interest §137
High Mountain Sheep Project Award ... ... §240
Hydro and Pumped Storage for Peaking—Rheingans ... *271
Italian Transformers for USA §408
John Day Lock and Dam —Mackintosh ... *355, *370
Mayfield Power Plant ... †90
Microwave Network for Colorado Project 276
Morrow Point Dam ... ... †489
Nickajack Turbine Contracts §325
Pump-Turbines for Smith Mountain ... ... †88
Round Butte Project ... †445
San Luis Pumped-Storage Station ... ... †446
Snake River, Tapping The ... †237
Thermalito Turbines, Feather River ... ... §178
Turbines for Alabama Power Company ... ... §138
Upper American River Project ... ... †171
Upper Missouri Development Planned ... ... †238
Yukon, Power from the—Sewell ... *259, *306, *348
USSR *see* Russia

V

Vaiont Disaster 4, *199, *210, †445, †487
Valves *see* Gates and Valves
Venezuela—
Guri Generators Ordered ... §452
Guri Project ... ... †44
Guri Project Started ... §138
Ventilation Ducting, Flexidux *485
Vevey Centenary 113
Vianden ... *285, *327, *391
Vianden Inaugurated ... ... §282
Vietnam, Danhim Station Inaugurated ... ... §137
Volta River *see* Africa

W

Waterstops, Vynon *317
Wales—
Ffestiniog Pumped-Storage Scheme 323
Rheidol Scheme *28
Rheidol Scheme Opened ... §324
Welding—
Cracking in Welded Joint between Turbine Scrollcase and Sectionalised Stayring —Webb *314
Turbine Shaft, Welded, 500MW ... ... §4
World Bank—
Bemposta, Portugal, Loan for ... ... §4
Bolivian Schemes, Financing *407
Brokke Scheme Norway, Finance for ... ... §92
Cook Strait Cable, Loan for §176
Ethiopian Power Loan ... §324

Indus Scheme, Pakistan, IDA Credit for *408
Kadincik River Plant, Turkey, Credit for *407
Kariba Power Line, World Bank Loan for ... ... §494
Lima, Loan for ... ... §49
Nare Scheme, Loan for ... §178
World Power Conference *see* Conferences

Y

Yugoslavia—
Iron Gates Agreement Signed §3
Iron Gates Project Construction Starts ... ... §451
Yukon, Power from the—Sewell *259, *306, *348

Editorials

Baldwin Hills Failure 405
Challenge to Water Power ... 1
Columbia River Agreement ... 91
Edinburgh Congress, The ... 175
Ffestiniog Pumped-Storage Scheme 323
Fraser River Report 239
High-Voltage Transmission Centenary 135
Hydro Power as an Export ... 365
Hydroelectric Image 281
New Forum? A 47
Problems of Large Units ... 491
War Against Waste 449

Book Reviews

Angewandte Hydraulik—III; Turbomaschinen—Ribaux ... 169
Bautypen der Wasserkraft—Pircher 277
Berechnung Elektrischer Verbundnetz—Edelmann ... 443
Book of Water Power—Gerard 130
Charts for the Hydraulic Design of Channels and Pipes—Ackers 169
Concrete Manual—USBR ... 235
Conservation of Water Resources of the United Kingdom 276
Contract Journal Directory and Year Book 319
Costruzioni Idrauliche—Marzolo 235
Danube 443
Der Felsbau, Vol. I, Theoretischer Teil-Felsbau über Tage—Müller 87
Dilution Techniques for Flow Measurement—Collinge and Simpson ... ... §52
Draukraftwerk Edling—The Drau Power Station at Edling 170
Earth and Earth-Rock Dams—Sherard, Woodward, Gizienski and Clevenger 361
Earth-moving and Excavating Plant—Hammond 484
Energétique: Les Besoins d'Energie—Ailleret 130
European Practices in Design and Construction of Concrete Dams—Copen, Rouse and Wallace 234
Final Report of the Investigating Committee of the Malpasset Dam 443
Forces hydrauliques et économie énergétique de la Suisse: Complément 1956/63 aux tableaux de la publication ASAE No. 34 169
Formwork for Concrete Structures—Peurifoy 529
Formwork for Massive Concrete Structures in Hydro Developments—Ermolov and Petrov 234
Gerinnehydraulik—Schmidt ... 529
Groundwater Legislation in Europe 444
History of Tunnelling—Sandström 129
Hydraulic Transients, Second Edition—Rich 130
Hydraulik—Wechmann ... 444
Hydrodynamic Superposability—Ballabh 130
Hydrodynamique et ses applications—Levin 277
International Code for Field Acceptance Tests of Hydraulic Turbines (IEC Publication 41) 527
Kempe's Engineers Yearbook, 1964—Prockter 130
Large Dams of the USSR ... 86
Measurement of Liquid Flow in Open Channels (BS 3680) ... 319
Monte Carlo Approach to the Flow Problems of Turbomachinery—Paranjpe 444
Ölhydraulik—Zoebel 85
On the Ideal Flow Through Axial Turbomachine Cascades—Nilsson 443
Optimum Management of Nile Discharge (Eighth Edition)—Keller 528
Proceedings of Hydrology Symposium—No. 3 318
Proceedings of the Regional Symposium on Dams and Reservoirs 319
Rasvitie Gidro-Energetiki USSR—Nesteruk 318
Research for Industry 1963 ... 529
Stählerne Druckrohrverzweigungen—Atrops 169
Symposium on Peak Load Coverage, Venice—Vol. I 319
Systematik der Wasserkräfte der Bundesrepublik Deutschland, Stand 1962—Frohnholzer 86
Theory of Turbo-Machines—Csanady 528
Topmost Dams of the World—Japan Dam Association ... 235
Traité d'Hydraulique Fluviale Appliqué—Cours d'Eau Non-Navigables—Tome I—Quesnel 319
Treatise on Applied Hydraulics—Addison 276
Turbines, Steam, Water and Gas—Westbury 276
TVA Technical Report 35; Colbert Steam Plant 277
Variable-Pressure Water-Turbine Test Rig at NEL—Winternitz and Mansfield 86
Wasserkraftmaschinen — Meerwarth 129
Water Power Development Vol. I: Low-Head Power Plants—Mosonyi 277
Water Resources Engineering—Lindsley and Franzini ... 361
World Register of Dams ... 484
Zakladáni Vodnich děl na Sypkých Zeminách—Bažant 277

Correspondence

Book Reviews—Zawadowski ... 529
Chemical Grouts
—Fern 284
—Lancaster-Jones 326
Geology in the Training of the Civil Engineer—Burton ... 369
High-Head Pump-Turbines—Weiss 409
Jugoslav-Swedish Joint Venture—Wilmot 369
Mass Oscillations in Surge Tanks—Russo 409
Stability Investigations by Computer—Forster 369
Vaiont Disaster—Jordaan ... 4

Authors and Correspondence

Abecasis, Fernando Manzanares *147
Anwar, H. O., Dr.-Ing. ... *152
Baggström, G. *516
Bier, P. J. 107
Bretz, Karl-Werner 114
Brinkworth, B. J., M.Sc.(Eng.), Ph.D. *495
Burton, A. N. 369
Causon, G. J., B.Sc.(Eng.), A.M.I.E.(Aust.) 439
Cheung, Y. K. *193
Chikwendu, L. N. *423
Duncan, Neil, B.Sc., A.I.M.M., A.M.I.Min.E., F.G.S. ... 257
El-Agib, A. A. R., B.Sc.(Eng.), D.I.C., A.M.I.Mech.E. ... *432
Evans, G. V., Dip.Tech.(Eng.) *495
Fern, K. A. 284
Foord, T. R., Wh.Sch., Ph.D., A.M.I.E.E. *432, 483
Forster, John W. 369
Francis, Prof. J. R. D. *26, *423
Franke, Prof. Dr.-Ing. habil. P.-G. *253
Hunter, J. K., B.Sc., M.I.C.E., M.I.Mech.E., M.I.E.E. ... 251
Jaeger, Dr. Charles *210
Jordaan, Jan. M., B.Sc.(Eng.), Sc.D. 4
Kapp, Professor R. O. ... 443
Königshofer, Prof. Dr. E. ... *501
Lancaster-Jones, P. F. F., B.Sc., F.G.S. 226, 326
Langlands, R. C., M.Sc., A.M.I.E. *432
Low, Edward J., P.E.(Calif.) ... *472
Mackintosh, Ian, B., M.A., A.M.I.C.E., M.ASCE *218, 315, *355, *370
Mosonyi, Prof. Dr. E. *312
Naber, Dr.-Ing. Gerhard ... *264
Nagy, Dr. L. *312
Pearsall, I. S., Ph.D., B.Sc.(Eng.), A.M.I.Mech.E. *80
Pendse, V. R., B.E., LL.B. ... *477
Quintela, Antonio Carvalho ... *147
Rabcewicz, L. v., Prof. Dr. techn. *453, *511
Rajaratnam, N., B.E.(Hons.), M.Sc.(Eng.), Ph.D. ... *14, *61
Rheingans, William J. *271
Ribi, R. *160, *243
Russo, R. 409
Rydzewski, J. R., Ph.D., A.M.I.C.E., M.ASCE ... *294
Schlittler, F. *160, *243
Serafim, J. Laginha *199
Sewell, W. R. Derrick, M.A., B.Sc. *259, *306, *348
Soicher, P. A. *522
Sollid, Erik 462
Swaminatham, V. S., M.A., M.Sc.(Lond.) 470
Ullmann, F., Dr. ès sc. techn. *298, *338
Vennemann, H., Dr.-Ing. ... *477
Webb, G. P., B.Sc.(Eng.), P.Eng. *314
Weiss, T. F. 409
Wilmot, A 369
Zawadowski, N. 529
Zienkiewicz, Prof. O. C., B.Sc., Ph.D.(Lond.), D.I.C., M.I.C.E. A.C.G.I. ... 38, *193, *382

For the convenience of those who do not bind back copies, the following table shows the numbers of the pages contained in each issue of WATER POWER for 1964:

January	1- 46	July	281-322
February	47- 90	August	323-364
March	91-133	September ...	365-404
April	135-173	October	405-447
May	175-238	November ...	449-489
June	239-280	December ...	491-531